

**Technical Report 13-008**

# **Quantifying Entrepreneurial Networks: Data Collection in Addis Ababa, Ethiopia**

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U.S. Military Academy, West Point NY

**July 2013**



**United States Military Academy  
Network Science Center**

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## **Quantifying Entrepreneurial Networks: Data Collection in Addis Ababa, Ethiopia**

**Daniel Evans**

### **Abstract**

Sociologists, economists, and network scientists concur that the entrepreneur's network is critical to success but have consistently struggled with developing models that are measurable or quantifiable. Well-known research on this subject tends to focus on the entrepreneur's social network (Greve and Salaff, 2003, Witt, 1978) and utilizes the Name Generator approach (McAllister and Fischer, 1978) to develop the social network model. This method maps an ego-centered network and assembles an inventory of information about every social contact, such as the relationship between the person under analysis and the people within the social network (Van Der Gaag & Snijders, 2004).



**Addis Ababa Skyline**

Our research goal is to quantify the entrepreneurial network in such a way that the analysis provides concrete policy recommendations. Our Center has experimented with several data collection methodologies and we have developed an innovative yet simple technique that allows us to develop quantifiable entrepreneur networks. Our innovation is not to develop each individual entrepreneur's network but to understand the entire entrepreneurial network of the community in which the entrepreneur lives and operates. In order to develop this model, we have adapted a technique used in sociology to measure social capital called the Position Generator (Lin, Dumin1986; Lin et. al. 2001). This technique circumvents the massive effort of mapping an individual's social network before locating the social resources in it. By approaching the entrepreneur's network through the analysis of his connections to prominent structural positions in the community or society, researchers are able to construct measures that obtain information on the strength of ties and structural holes (Lin 2001:63).

## **Data Collection Background**

Mr. Dan Evans visited Addis Ababa, Ethiopia in support of an ongoing Network Science Center project that is developing models of entrepreneurial networks. New data sets and models, we be compared based on the development of new network classification methods. Once classified, driver nodes will be identified to help aid policy makers to influence the existing network in order to cause it to evolve towards a more desirable state. A copy of the survey is located in Appendix 1.

The team initially conducted a test data collection in Addis Ababa during July of 2012. The lessons learned were incorporated during subsequent visits in order to make our data collection effort more effective and efficient. Dr. Charles Thomas and I conducted the first data collection trip in Kampala, Uganda during April of 2013. (The Kampala trip report and initial network model analysis can be accessed [here](#).) This visit to Addis Ababa is the second data effort. This collection was significantly helped because of the strong relationship established during the previous visit.

Markos Lemma of the [Deutsche Gesellschaft für Internationale Zusammenarbeit \(GIZ\)](#) GmbH, a German government enterprise focusing on international cooperation for sustainable development and international education, was instrumental in assisting with this visit. Markos is also the Community Manager of [iceaddis](#), Ethiopia's first high tech innovation hub. iceaddis is located on the beautiful campus of the Ethiopian Institute of Architecture, Building Construction and City Development ([EiABC](#)).

Markos introduced me to two local entrepreneurs and university students, Abiy Hailu and Alem Assefa, who arranged and coordinated my interviews with the local

entrepreneurial community. These two young men are not only students but are members of a team known as [mirtanimations](#), a group of local tech entrepreneurs who are involved in everything from animation, 3D graphics, tech tutorials, photography, and ringtones.



## iceaddis, Ethiopia's First High Tech Innovation Hub



**The mirt Team**

On my previous visit to Addis Ababa, I had been introduced to Steadman Harrison from the [Center for Creative Leadership](#), a top-ranked, global provider of executive education headquartered in North Carolina and led by Admiral (Retired) John Ryan, a former Superintendent of the US Naval Academy. They have been involved in a mentoring program that focuses on developing women leaders in Ethiopia. His staff was instrumental in conducting additional interview sessions with other local entrepreneurs in their extensive network.

The next data collection effort will be conducted in Lusaka, Zambia in August of 2013, where we will meet with entrepreneurs in both Livingston and Lusaka. While in Lusaka, we will collaborate with the staff of [BongoHive](#), a business incubator that is a member of the [AfriLabs](#) innovation network.





**The Ethiopian Institute for Architecture, Building Construction, and City Development**



**Abiy Hailu**



**Alem Assefa**

## Ethiopia Background

Ethiopia is unique among African countries in that the ancient Ethiopian monarchy maintained its freedom from colonial rule with the exception of a short-lived Italian occupation from 1936-41. In 1974, a military junta known as "the Derg," deposed Emperor Haile Selassie, who had ruled since 1930, and then established a socialist state. Torn by bloody coups, uprisings, wide-scale drought, and massive refugee problems, the regime was finally toppled in 1991 by the Ethiopian People's Revolutionary Democratic Front (EPRDF). A constitution was adopted in 1994, and Ethiopia's first multiparty elections were held in 1995.

Recently, the new African Union headquarters complex was inaugurated in Addis Ababa on 28 January 2012. The complex was built by China State Construction Engineering Corporation as a gift from the Government of China, and consists of a 2,500-seat plenary hall and a 20-story office tower.



### African Union Headquarters and Ongoing Construction

The Government unveiled a five-year Growth and Transformation Plan in 2010. This plan is an ambitious government-led effort to achieve the country's development goals. According the US State Department, Ethiopia has attracted significant foreign investment in commercial agriculture and manufacturing. However, the finance, insurance, and micro-credit industries are restricted to domestically-owned firms. Ethiopia's constitution mandates that the state owns all land and, subsequently, provides long-term leases to the tenants. The Government has started to issue land use "certificates" so that tenants have some type of recognizable rights to continued



occupancy. While GDP growth has remained high, per capita income is among the lowest in the world.



**Road Construction in Addis Ababa**



**Light Rail Construction in Addis Ababa**

#### **Day 1 (3 June 2013):**

I started my day with a visit with the CCL staff at their office in the Sar Bet district of Addis Ababa. The CCL office is in a small compound near the Adams Pavilion, a well-known shopping center in Addis Ababa.



I introduced my project to several staff members of the CCL. We had a productive discussion about other potential uses of my methodology and we discussed ideas for future collaborative projects. The CCL staff volunteered to assist me in my Ethiopian data collection efforts throughout the week and very graciously offered their space to me if I needed a place to work during my visit.



**Aaron White and Steadman Harrison of CCL meet in Compound**

After the meeting at CCL, I drove across town to iceaddis. At iceaddis, I was welcomed by Abiy and Alem and I reviewed the research plan with them and they described their data collection plan for the next three days.

### **Day 2 (4 June 2013):**

I met Abiy and Alem at iceaddis and small groups of entrepreneurs met me there throughout the day. The entrepreneurial environment is a bit less mature in Addis Ababa than other places I have visited in Sub-Saharan Africa. The entrepreneurs I met were mainly young people (primarily university students or recent graduates) with ambitious plans but in many cases, struggling to gain traction. Interestingly, the majority of the people I interviewed were women. Abiy and Alem told me that their network just happened to have this composition, however I plan to investigate this further.



**Entrepreneur Interview**



**Recently completed Express and Local Lanes Bole Road/Africa Avenue in Addis Ababa**

### Day 3 (5 June 2013):

I started the morning by driving to the Bole neighborhood of Addis Ababa to meet with the country manager for [Schulze Global Investments](#) (SGI), an emerging markets private equity firm. I had been introduced to Ms. Berhane Demisse on a previous trip and I gave her a short introduction to the Entrepreneurial Network project and then we had a discussion that included the lack of capital available to entrepreneurs in developing economies and she explained how SGI is approaching this issue.

After this meeting, I drove across town back to iceaddis and was met by Abiy and Alem. I spent the rest of the day interviewing entrepreneurs in the incubator. I was able to have an enjoyable break when Ayib, Alem, and I ate a traditional lunch at a local cafe and then we had coffee at a student coffee hangout located down an alleyway in the local neighborhood. Ayib and Alem told me that I was likely the first ferenge, or foreigner, to ever have visited there.



**Local “Coffee Shop”**

### Day 4 (6 June 2013):

Early in the morning I linked up with Abiy and we drove to Urael neighborhood of Addis Ababa. There we visited the offices of the Digital Opportunity Trust (DOT), an organization whose mission is to connect youth with technology, to build human capacity, to instill an entrepreneurial way of thinking, and to provide the tools for community-led economic and social development. I had the opportunity to meet and present my project to Fikre Zewdie, the Ethiopian Country Director as well as several members of the staff. After our short meeting, I was able to interview several entrepreneurs who are associated with DOT.



After the interviews, Abiy took me to several entrepreneurs at their offices/work spaces located all around the city. Like any large city, traveling around, especially with the traffic and construction, made quick progress a bit of a challenge.

I was fortunate to be able to meet with many fascinating entrepreneurs throughout the day. Some examples of the types of entrepreneurs/businesses include:

**Michael Fassil:** A member of the mirt team who has developed an interest in photography into a thriving business focusing on assisting firms with marketing and promotion items. You can see his photography skills [here](#).

**Eyosias:** Another member of the mirt team who has taught himself and has become an expert at computer animation and 3D graphics. He is applying these skills with his architecture degree to create some amazing presentations.

**Miki:** A young entrepreneur who had previously experimented with an agricultural business and is now developing a [web-based platform](#) that enables local buyers and sellers of used goods to find each other.

**Tewodros:** Initially established an innovation hub and worked on product design and branding in the interim to bring in revenue. The branding business has now taken off and he has four employees and his clients include Pepsi.

I also had the opportunity to eat lunch in the Piazza area of Addis Ababa with my guides. We ate at a traditional cafe that was really a butcher with the fresh sides of beef displayed on the street. You can witness the beef being delivered directly from the slaughterhouse. Customers give their order and a butcher cuts the appropriate meat, and delivers it to the kitchen to be prepared. I can't imagine my food being any fresher- the meat is never refrigerated. After lunch, we had a traditional coffee at the most famous and first coffee shop in Ethiopia called [Tomoca](#).



**The Scene inside Tomoca**

After meeting with numerous entrepreneurs throughout the day, we finished by visiting an [Information and Communications Technology exhibition](#) that was held at the Addis Ababa Exhibition Center. While at the exhibition, I was able to discuss numerous projects and initiatives with members of the Addis Ababa tech community. I was also able to interview numerous members of this group. I actually ran out of time before I could get through the willing interviewees.



**The ICT Exhibition in the Addis Ababa Exhibition Hall**

## Conclusion

In three incredibly busy days, I was able to interview approximately 50 local entrepreneurs. I could have never accomplished this feat without the assistance and planning of my two interns for the week, Abiy Hailu and Alem Assefa. I would also like to acknowledge the support of the staff at iceaddis who graciously allowed me to borrow some office space for the week. The team is currently analyzing the data that was collected and will be publishing a technical report addressing the entrepreneurial network in Addis Ababa.

Our network model and initial findings will be addressed in a follow-on technical paper. The team will visit Lusaka, Zambia in August 2013 and conduct a similar data collection effort. Eventually, we will develop entrepreneurial network models from four Frontier Markets and one model from a Developed Market. Upon completion of the data collection, the team will construct model social capital topologies of the networks, and then quantitatively differentiate these networks utilizing network analysis techniques resulting in several proposed network classifications. Additionally, we will determine if we can identify certain nodes, called driver nodes, that can be influenced in order to make network outcomes more socially desirable (Barabasi, 2011).

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## APPENDIX 1: Entrepreneur Network Survey

### Demographic Data:

1. Age
2. Sex
3. Marital Status
4. Annual Revenue
5. Sector
6. Political Party Affiliation
7. Education Level
8. Name of University/College

1. If you would need assistance with **legal registration** of your business, who would you most likely approach in order to address this issue?

- Myself
- Government Representative
- Government Business Development Program
- Private Incubator
- Non-Governmental Organization
- Venture Capitalist or Angel Investor
- Family Member
- Religious Leader
- Someone in Social Network
- Commercial Bank
- White Collar Professional
- Military Leader
- Education Leader

2. If you would need assistance with **start-up capital** of your business, who would you most likely approach in order to address this issue?

- Myself
- Government Representative
- Government Business Development Program
- Private Incubator
- Non-Governmental Organization
- Venture Capitalist or Angel Investor
- Family Member
- Religious Leader
- Someone in Social Network
- Commercial Bank
- White Collar Professional
- Military Leader
- Education Leader



3. If you would need assistance **acquiring equipment** for your business, who would you most likely approach in order to address this issue?

- Myself
- Government Representative
- Government Business Development Program
- Private Incubator
- Non-Governmental Organization
- Venture Capitalist or Angel Investor
- Family Member
- Religious Leader
- Someone in Social Network
- Commercial Bank
- White Collar Professional
- Military Leader
- Education Leader

4. If you would need assistance with **legal issues or intellectual property rights** for your business, who would you most likely approach in order to address this issue?

- Myself
- Government Representative
- Government Business Development Program
- Private Incubator
- Non-Governmental Organization
- Venture Capitalist or Angel Investor
- Family Member
- Religious Leader
- Someone in Social Network
- Commercial Bank
- White Collar Professional
- Military Leader
- Education Leader

5. If you would need assistance with **required infrastructure** for your business, who would you most likely approach in order to address this issue?

- Myself
- Government Representative
- Government Business Development Program
- Private Incubator
- Non-Governmental Organization
- Venture Capitalist or Angel Investor
- Family Member

- Religious Leader
- Someone in Social Network
- Commercial Bank
- White Collar Professional
- Military Leader
- Education Leader

6. If you would need assistance with **hiring additional employees** for your business, who would you most likely approach in order to address this issue?

- Myself
- Government Representative
- Government Business Development Program
- Private Incubator
- Non-Governmental Organization
- Venture Capitalist or Angel Investor
- Family Member
- Religious Leader
- Someone in Social Network
- Commercial Bank
- White Collar Professional
- Military Leader
- Education Leader